

SEQUENCE LISTING

<110> KYOWA HAKKO KOGYO CO., LTD.,

<120> NOVEL POLYPEPTIDE

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<140> US 09/856,617

<141> 2001-05-24

<150> H10-332484

<151> 1998-11-24

<150> H11-248442

<151> 1999-09-02

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Ile Gln Met Asp Glu Gly Gly Gly Val Val Val Tyr Gln Asp Asp Tyr

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Cys Ser Gly Ser Val Met Ser Glu Arg Val Ser Gly Leu Ala Gly Ser

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Ser Val Leu Ser Glu Asn Gln Glu His Glu Val Glu Leu Glu Leu Leu
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Leu Arg Lys Gln Ala Glu Glu Lys Phe Ile Glu Phe Glu Asp Ala Leu
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Glu Gln Glu Lys Lys Glu Leu Gln Ile Gln Val Glu His Tyr Glu Phe
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Gln Thr Arg Gln Leu Glu Leu Lys Ala Lys Asn Tyr Ala Asp Gln Ile
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Leu His Gln Arg His Thr Glu Met Ile Gln Thr Tyr Val Glu His Ile
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885 890 895

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Cys Ser Gly Ser Val Met Ser Glu Arg Val Ser Gly Leu Ala Gly Ser

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Cys Ser Gly Ser Val Met Ser Glu Arg Val Ser Gly Leu Ala Gly Ser

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Val Lys Glu Leu Met Pro Leu Val Val Asn Val Leu Glu Asn Leu Asp

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Leu Arg Lys Gln Ala Glu Glu Lys Phe Ile Glu Phe Glu Asp Ala Leu

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Gln Thr Arg Gln Leu Glu Leu Lys Ala Lys Asn Tyr Ala Asp Gln Ile

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Leu His Gln Arg His Thr Glu Met Ile Gln Thr Tyr Val Glu His Ile
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Ser Leu Pro Gly Arg Arg Lys Glu Arg Pro Thr Ser Leu Asn Val Phe
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Pro Leu Ala Asp Gly Met Val Arg Ala Gln Met Gly Gly Lys Leu Val
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360 365 370

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Thr Ala Gly Ser Glu Val Ile Gly Asp Val Asp Glu Gly Ala Asp Leu
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Ser Gly Glu Gln Glu Val Leu Lys Gly Glu Leu Glu Ala Ala Lys Gln
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 Pro Met Ala Gln Arg Arg Arg Phe Thr Arg Val Glu Met Ala Arg Val
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 Arg Ser His Ala Leu Cys Gln Ile Ser Ala Gly Ser Arg Pro Leu Glu
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 Arg Glu Gln Tyr Arg Gln Val Arg Glu His Val Arg Asn Asp Asp Gly
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710 715 720

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725 730 735

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740 745 750 755

gag aag aag aag gca aag gaa acc cct gag gca gat gct acc tcc agt 2419
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775 780 785

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790 795 800

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805 810 815

gac tat ccc cct ggg gag atg ttc cta gac agt gat gtg aac cct gaa 2611
Asp Tyr Pro Pro Gly Glu Met Phe Leu Asp Ser Asp Val Asn Pro Glu
820 825 830 835

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Asp Ser Gly Ala Asp Gly Val Leu Ala Gly Ile Thr Leu Val Gly Cys
840 845 850

gct acc cgc tgc aat gtt cca cgt agc aac tgt tcc tca cga gga gac 2707
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870 875 880

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885 890 895

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900 905 910 915

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Pro Gly Pro Leu Thr Glu His Val Phe Thr Asp Pro Ala Pro Thr Pro
920 925 930

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935 940 945

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950 955 960

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965 970 975

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980 985 990 995

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Ile Lys Leu Lys Asp Ser Val Leu Ser Leu Val His Val Lys Gly Arg
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Val Leu Val Ala Leu Ala Asp Gly Thr Leu Ala Ile Phe His Arg Gly
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Thr Leu Asn Gly Ser Val Leu Asp Ser Pro Ser Glu Gly Pro Gly Pro
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1270 1275 1280

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Ser Tyr Thr Pro Glu
1335

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Pro Pro Ile Met Asn Gly Pro Met His Pro Arg Pro Leu Val Ala Leu
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Leu Asp Gly Arg Asp Cys Thr Val Glu Met Pro Ile Leu Lys Asp Val
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Ala Thr Val Ala Phe Cys Asp Ala Gln Ser Thr Gln Glu Ile His Glu
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Lys Val Leu Asn Glu Ala Val Gly Ala Leu Met Tyr His Thr Ile Thr
55 60 65

ctg acc aga gaa gat ctg gag aag ttt aaa gct ctt aga atc atc gtc 295
Leu Thr Arg Glu Asp Leu Glu Lys Phe Lys Ala Leu Arg Ile Ile Val
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Arg Ile Gly Ser Gly Phe Asp Asn Ile Asp Ile Lys Ser Ala Gly Asp
90 95 100

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Leu Gly Ile Ala Val Cys Asn Val Pro Ala Ala Ser Val Glu Glu Thr
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Gln Ile Arg Glu Val Ala Ser Gly Ala Ala Arg Ile Arg Gly Glu Thr
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170 175 180

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Ala Lys Ala Phe Gly Phe Asn Val Leu Phe Tyr Asp Pro Tyr Leu Ser
185 190 195

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Asp Gly Ile Glu Arg Ala Leu Gly Leu Gln Arg Val Ser Thr Leu Gln
200 205 210

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215 220 225

gag cac aac cac cac ctc atc aat gac ttt act gtc aag cag atg aga 775
Glu His Asn His His Leu Ile Asn Asp Phe Thr Val Lys Gln Met Arg
230 235 240 245

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265 270 275

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Leu Asp Val His Glu Ser Glu Pro Phe Ser Phe Ser Gln Gly Pro Leu
280 285 290

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295 300 305

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330 335 340

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Lys Asp His Leu Thr Ala Ala Thr His Trp Ala Ser Met Asp Pro Ala
345 350 355

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Val Val His Pro Glu Leu Asn Gly Ala Ala Tyr Ser Arg Tyr Pro Pro
360 365 370

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375 380 385

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390 395 400 405

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His Pro Pro His Ala Pro Ser Pro Gly Gln Thr Val Lys Pro Glu Ala
410 415 420

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Asp Arg Asp His Thr Ser Asp Gln Leu
425 430

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ccagggactg tccttagggg ctctcggt atg atg gct gga gaa ggg tca acc 173
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cgc aga agt aaa gca gga aac cgg aga gag gac ctc agc tcc aag gta 269
Arg Arg Ser Lys Ala Gly Asn Arg Arg Glu Asp Leu Ser Ser Lys Val
25 30 35 40

acc ttg gag aag gtc ctg gga gtg aca gta tct gga gga aga gga ctt 317
Thr Leu Glu Lys Val Leu Gly Val Thr Val Ser Gly Gly Arg Gly Leu
45 50 55

gct tgt gag ccc cga tct ggc tta gtt gcc tac cca gca ggg tgt gtg 365
Ala Cys Glu Pro Arg Ser Gly Leu Val Ala Tyr Pro Ala Gly Cys Val
60 65 70

gtc gtc ctc ttc aat ccc cgg aag cac aaa cag cac cac atc ctc aac 413
Val Val Leu Phe Asn Pro Arg Lys His Lys Gln His His Ile Leu Asn
75 80 85

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90 95 100

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Tyr Leu Val Thr Gly Glu Ser Gly His Met Pro Ala Val Arg Val Trp
105 110 115 120

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Asp Val Ala Glu Arg Ser Gln Val Ala Glu Leu Gln Glu His Lys Tyr
125 130 135

ggg gtg gct tgt gtg gct ttc tcc cca agt gcc aag tac att gtg tct 605
Gly Val Ala Cys Val Ala Phe Ser Pro Ser Ala Lys Tyr Ile Val Ser
140 145 150

gtg ggc tac cag cat gac atg att gtc aac gtg tgg gcc tgg aag aaa 653
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155 160 165

aac att gta gtg gcc tcc aac aaa gta tcc agt cgg gta acc gca gtg 701
Asn Ile Val Val Ala Ser Asn Lys Val Ser Ser Arg Val Thr Ala Val
170 175 180

tcc ttt tct gaa gac tgc agc tac ttt gtc act gca ggc aac cgg cac 749
Ser Phe Ser Glu Asp Cys Ser Tyr Phe Val Thr Ala Gly Asn Arg His
185 190 195 200

atc aaa ttc tgg tac ctg gat gac agt aag acc tca aag gtg aac gcc 797

Ile Lys Phe Trp Tyr Leu Asp Asp Ser Lys Thr Ser Lys Val Asn Ala
205 210 215

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Thr Val Pro Leu Leu Gly Arg Ser Gly Leu Leu Gly Glu Leu Arg Asn
220 225 230

aac ctg ttc act gat gtg gcc tgt ggc cga ggg gaa aag gct gat agc 893
Asn Leu Phe Thr Asp Val Ala Cys Gly Arg Gly Glu Lys Ala Asp Ser
235 240 245

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Thr Phe Cys Ile Thr Ser Ser Gly Leu Leu Cys Glu Phe Ser Asp Arg
250 255 260

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Arg Leu Leu Asp Lys Trp Val Glu Leu Arg Asn Thr Asp Ser Phe Thr
265 270 275 280

acc act gtg gcc cac tgc atc tct gtc acc caa gaa tac atc ttc tgt 1037
Thr Thr Val Ala His Cys Ile Ser Val Thr Gln Glu Tyr Ile Phe Cys
285 290 295

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Gly Cys Ala Asp Gly Thr Val Arg Leu Phe Asn Pro Ser Asn Leu His
300 305 310

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Phe Leu Ser Thr Leu Pro Arg Pro His Ala Leu Gly Thr Asp Ile Ala
315 320 325

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Ser Ile Thr Glu Ala Ser Arg Leu Phe Ser Gly Gly Val Asn Ala Arg
330 335 340

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Tyr Pro Asp Thr Ile Ala Leu Thr Phe Asp Pro Thr Asn Gln Trp Leu
345 350 355 360

tct tgt gta tac aac gac cac agc ata tat gtt tgg gat gtg agg gac 1277
Ser Cys Val Tyr Asn Asp His Ser Ile Tyr Val Trp Asp Val Arg Asp
365 370 375

ccc aag aaa gtg ggg aag gtg tac tcc gct ctg tat cac tcc tcc tgt 1325
Pro Lys Lys Val Gly Lys Val Tyr Ser Ala Leu Tyr His Ser Ser Cys

380

385

390

gtc tgg agt gtg gag gtc tac cct gag atc aag gac agt cac cag gcc 1373
Val Trp Ser Val Glu Val Tyr Pro Glu Ile Lys Asp Ser His Gln Ala
395 400 405

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Cys Leu Pro Leu Ser Ser Phe Ile Thr Cys Ser Ser Asp Asn Thr Ile
410 415 420

cgc ctg tgg aac aca gag agc tct ggg gta cat ggc tct acc ctg cac 1469
Arg Leu Trp Asn Thr Glu Ser Ser Gly Val His Gly Ser Thr Leu His
425 430 435 440

cgt aac atc ctc agc aat gat ctc att aag atc atc tat gtg gat ggg 1517
Arg Asn Ile Leu Ser Asn Asp Leu Ile Lys Ile Ile Tyr Val Asp Gly
445 450 455

aac act cag gct ttg ttg gac act gag ctg cct gga gga gac aaa gct 1565
Asn Thr Gln Ala Leu Leu Asp Thr Glu Leu Pro Gly Gly Asp Lys Ala
460 465 470

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Asp Gly Ser Leu Met Asp Pro Arg Val Gly Ile Arg Ser Val Cys Ile
475 480 485

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Ser Pro Asn Gly Gln His Leu Ala Ser Gly Asp Arg Met Gly Thr Leu
490 495 500

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Arg Ile His Glu Leu Gln Ser Leu Ser Glu Met Leu Lys Val Glu Ala
505 510 515 520

cac gac tct gag atc ttg tgc ctg gag tac tct aag cca gac aca ggt 1757
His Asp Ser Glu Ile Leu Cys Leu Glu Tyr Ser Lys Pro Asp Thr Gly
525 530 535

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Leu Lys Leu Leu Ala Ser Ala Ser Arg Asp Arg Leu Ile His Glu Leu
540 545 550

gat gct ggc cgg gaa tat agt cta cag cag aca ctg gat gag cat tca 1853
Asp Ala Gly Arg Glu Tyr Ser Leu Gln Gln Thr Leu Asp Glu His Ser
555 560 565

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Ser Ser Ile Thr Ala Val Lys Phe Ala Ala Ser Asp Gly Gln Val Arg
570 575 580

atg atc agc tgt ggt gca gac aag agc att tac ttc cga act gca cag 1949
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585 590 595 600

aag tct gga gaa gga gta cag ttt aca cga acg cac cac gtg gta cgg 1997
Lys Ser Gly Glu Gly Val Gln Phe Thr Arg Thr His His Val Val Arg
605 610 615

aag aca act ctc tat gac atg gat gtg gag ccc agc tgg aag tac acg 2045
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635 640 645

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Gly Lys Gln Lys Lys Leu Phe Lys Gly Ser Gln Gly Glu Asp Gly Thr
650 655 660

ctc att aag gtg cag aca gac ccc tca ggg atc tac att gcc act agc 2189
Leu Ile Lys Val Gln Thr Asp Pro Ser Gly Ile Tyr Ile Ala Thr Ser
665 670 675 680

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Cys Ser Asp Lys Asn Leu Ser Ile Phe Asp Phe Ser Ser Gly Glu Cys
685 690 695

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Val Ala Thr Met Phe Gly His Ser Glu Ile Val Thr Gly Met Lys Phe
700 705 710

agt aac gat tgc aaa cat ctc atc tct gtg tca ggg gac agc tgc atc 2333
Ser Asn Asp Cys Lys His Leu Ile Ser Val Ser Gly Asp Ser Cys Ile
715 720 725

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Phe Val Trp Arg Leu Ser Ser Glu Met Thr Ile Ser Met Arg Gln Arg
730 735 740

ctg cgt gag cgg cgg cag cgc cag cga ggg atc aag cag caa gga cca 2429

Leu Arg Glu Arg Arg Gln Arg Gln Arg Gly Ile Lys Gln Gln Gly Pro
745 750 755 760

acg tct ccc cag agg gct tct gga gcc aag cag cac cat gct cca gtg 2477
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765 770 775

gta ccc cct tct gga cca gct ctt tcc tca gac agt gac aag gag gga 2525
Val Pro Pro Ser Gly Pro Ala Leu Ser Ser Asp Ser Asp Lys Glu Gly
780 785 790

gaa gat gag ggt act gaa gaa gaa gaa ttg cca gct ctg ccc atc ctt 2573
Glu Asp Glu Gly Thr Glu Glu Glu Glu Leu Pro Ala Leu Pro Ile Leu
795 800 805

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Ser Lys Ser Thr Lys Lys Glu Leu Ala Ser Gly Ser Ser Pro Ala Leu
810 815 820

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Leu Arg Ser Leu Ser His Trp Glu Met Ser Arg Ala Gln Glu Thr Met
825 830 835 840

gag tac ctg gac cca gct cct gta gct aac aca gga cct aaa aga aga 2717
Glu Tyr Leu Asp Pro Ala Pro Val Ala Asn Thr Gly Pro Lys Arg Arg
845 850 855

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Gly Arg Trp Ala Gln Pro Gly Val Glu Leu Ser Val Arg Ser Met Leu
860 865 870

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Asp Leu Arg Gln Ile Glu Thr Leu Ala Pro Ser Pro Arg Gly Pro Ser
875 880 885

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Gln Asp Ser Leu Ala Val Ser Pro Ala Gly Pro Gly Lys His Gly Pro
890 895 900

cag gcc cct gag ctg tca tgt gtc agt cag aat gaa agg gcc cct cgg 2909
Gln Ala Pro Glu Leu Ser Cys Val Ser Gln Asn Glu Arg Ala Pro Arg
905 910 915 920

ctt cag acc tcc caa ccc tgc tcc tgc ccc gac att atc caa ttg ttg 2957
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925

930

935

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940 945 950

gaa gat ggt att gtc tac ccg gaa ccc agt gac agc cct acc atg gat 3053
Glu Asp Gly Ile Val Tyr Pro Glu Pro Ser Asp Ser Pro Thr Met Asp
955 960 965

acc agt gcg ttt cag gtg cag gct cca acc gga gga tcc cta gga aga 3101
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970 975 980

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Met Tyr Pro Gly Ser Arg Gly Ser Glu Lys His Ser Pro Asp Ser Ala
985 990 995 1000

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Cys Ser Val Asp Tyr Ser Ser Arg Leu Ser Ser Pro Glu His Pro
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Asn Glu Asp Ser Glu Ser Thr Glu Pro Leu Ser Val Asp Gly Ile Ser
1020 1025 1030

tca gac ctg gaa gag cca gcc gag ggt gat gaa gac gag gaa gag 3293
Ser Asp Leu Glu Glu Pro Ala Glu Gly Asp Glu Asp Glu Glu Glu
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Gly Gly Thr Gly Leu Cys Gly Leu Glu Gly Gly Pro Arg Thr Pro
1050 1055 1060

gat cag gaa cag ttt cta aaa cag ctc ttt gag act ctg gcc aat ggg 3389
Asp Gln Glu Gln Phe Leu Lys Gln Leu Phe Glu Thr Leu Ala Asn Gly
1065 1070 1075 1080

act gct cca ggg ggc cca gca cgg gtg cta gag agg aca gag tct cgg 3437
Thr Ala Pro Gly Gly Pro Ala Arg Val Leu Glu Arg Thr Glu Ser Arg
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agc atc tca tca cga ttc ctt ctg caa gtg cag acc ctc cca ctc agg 3485
Ser Ile Ser Ser Arg Phe Leu Leu Gln Val Gln Thr Leu Pro Leu Arg
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Glu Pro Ser Leu Ser Ser Ser Gly Leu Ala Leu Thr Ser Arg Pro Asp
1115 1120 1125

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Gln Val Ser Gln Val Ser Gly Glu Gln Leu Lys Gly Ser Gly Ala Thr
1130 1135 1140

cct cca gga gca ccc cca gaa atg gaa ccc tct tct ggc aac tct ggc 3629
Pro Pro Gly Ala Pro Pro Glu Met Glu Pro Ser Ser Gly Asn Ser Gly
1145 1150 1155 1160

ccc aag cag gtg gct cct gtg ctg ttg aca cga cgg cgt aac aac ttg 3677
Pro Lys Gln Val Ala Pro Val Leu Leu Thr Arg Arg Arg Asn Asn Leu
1165 1170 1175

gac aac agc tgg gcc tcc aag aaa atg gct gca acc cgg cct tta gct 3725
Asp Asn Ser Trp Ala Ser Lys Lys Met Ala Ala Thr Arg Pro Leu Ala
1180 1185 1190

gga ctc cag aaa gcc cag tct gtg cat agt ttg gta cca cag gat gag 3773
Gly Leu Gln Lys Ala Gln Ser Val His Ser Leu Val Pro Gln Asp Glu
1195 1200 1205

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Val Pro Ser Ser Arg Pro Leu Leu Phe Arg Glu Ala Glu Thr Gln Gly
1210 1215 1220

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Ser Leu Gly Ser Leu Pro Gln Ala Gly Gly Cys Ser Ser Gln Pro His
1225 1230 1235 1240

tcc tac cag aac cac acc acc agt tct atg gcc aag cta gcg cgt agt 3917
Ser Tyr Gln Asn His Thr Thr Ser Ser Met Ala Lys Leu Ala Arg Ser
1245 1250 1255

att tct gtt ggc gag aat ccg ggc ctg gca act gaa cct caa gct cct 3965
Ile Ser Val Gly Glu Asn Pro Gly Leu Ala Thr Glu Pro Gln Ala Pro
1260 1265 1270

gca ccg atc cga atc tca cca ttc aac aaa cta gct ctg cct agc agg 4013
Ala Pro Ile Arg Ile Ser Pro Phe Asn Lys Leu Ala Leu Pro Ser Arg
1275 1280 1285

gct cac ctt gtc ctg gac atc ccc aaa cca ctt cct gac cgt cct act 4061

Ala His Leu Val Leu Asp Ile Pro Lys Pro Leu Pro Asp Arg Pro Thr
1290 1295 1300

ctg acc aca ttc tca cct gta tcc aag ggc ctg acc cac aat gaa aca 4109
Leu Thr Thr Phe Ser Pro Val Ser Lys Gly Leu Thr His Asn Glu Thr
1305 1310 1315 1320

gaa caa tcg ggg ccc ctt cgt gag cct agg aag gct cat act aca gtt 4157
Glu Gln Ser Gly Pro Leu Arg Glu Pro Arg Lys Ala His Thr Thr Val
1325 1330 1335

gaa aag cac tcc tgt tta ggg gag ggt act act cat aaa tct agg aca 4205
Glu Lys His Ser Cys Leu Gly Glu Gly Thr Thr His Lys Ser Arg Thr
1340 1345 1350

gag tgc cag gct tat cct gga ccc aac cac ccc tgt cgc cag caa ctg 4253
Glu Cys Gln Ala Tyr Pro Gly Pro Asn His Pro Cys Arg Gln Gln Leu
1355 1360 1365

cca gtc aac aac ctt ctc caa gct gag agc ttg cag ccc ctg tcc cct 4301
Pro Val Asn Asn Leu Leu Gln Ala Glu Ser Leu Gln Pro Leu Ser Pro
1370 1375 1380

gag aag act cgt aac ccc gtg gaa agc agc agg cca ggg gta gcc ctg 4349
Glu Lys Thr Arg Asn Pro Val Glu Ser Ser Arg Pro Gly Val Ala Leu
1385 1390 1395 1400

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Ser Gln Asp Ser Glu Leu Ala Leu Ser Leu Gln Gln Cys Glu Gln Leu
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gtg gca gag ctc cag ggg aat gta cgc cag gca gtg gag ctc tac cgc 4445
Val Ala Glu Leu Gln Gly Asn Val Arg Gln Ala Val Glu Leu Tyr Arg
1420 1425 1430

gcg gtg acc agc tgt aag aca cct tcg gca gag caa agt cac atc acc 4493
Ala Val Thr Ser Cys Lys Thr Pro Ser Ala Glu Gln Ser His Ile Thr
1435 1440 1445

cgt ctc ctg aga gac acc ttc tct ccg gtg cga cag gag ctc gag gtt 4541
Arg Leu Leu Arg Asp Thr Phe Ser Pro Val Arg Gln Glu Leu Glu Val
1450 1455 1460

ctg gct ggg gca gtg ctg tcc agc cca ggt ggc agc cct ggg gct gtg 4589
Leu Ala Gly Ala Val Leu Ser Ser Pro Gly Gly Ser Pro Gly Ala Val

1465 1470 1475 1480

gcg gct gag cag acg cag gcc ctg ttg gag caa tac tcc gag cta ctg 4637
 Ala Ala Glu Gln Thr Gln Ala Leu Leu Glu Gln Tyr Ser Glu Leu Leu
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 Leu Gly Leu Arg Pro Thr Ser Val Asp Pro Ala Leu Arg Arg Arg Arg
 20 25 30

cgg ggc ccc aga aac aag aag cgc ggc tgg agg agg ctc gcc gag gag 144
 Arg Gly Pro Arg Asn Lys Lys Arg Gly Trp Arg Arg Leu Ala Glu Glu
 35 40 45

ccg ctg ggg tta gag gtc gac cag ttc ctg gaa gac gtc cgg cta cag 192
 Pro Leu Gly Leu Glu Val Asp Gln Phe Leu Glu Asp Val Arg Leu Gln
 50 55 60

gag cgc acg acc ggt ggc ttg ttg gca gag gcc cca aac gaa aag ctc 240
 Glu Arg Thr Thr Gly Gly Leu Leu Ala Glu Ala Pro Asn Glu Lys Leu
 65 70 75 80

ttc ttc gtg gac aca gga ttc aag aga aaa gaa cca aga aag aag agg 288
 Phe Phe Val Asp Thr Gly Phe Lys Arg Lys Glu Pro Arg Lys Lys Arg
 85 90 95

acc ttg gtc cag aag aag tca cag cgt ctc cag aaa ccc tta cgg gtt 336
Thr Leu Val Gln Lys Lys Ser Gln Arg Leu Gln Lys Pro Leu Arg Val
100 105 110

gac ctt gcc ctt gag aat cat tct aag atc cct gct ccc aaa gac atc 384
Asp Leu Ala Leu Glu Asn His Ser Lys Ile Pro Ala Pro Lys Asp Ile
115 120 125

ctc gca cat cag gtc cct aat gcc aag aag ctc agg cga aag gag gag 432
Leu Ala His Gln Val Pro Asn Ala Lys Lys Leu Arg Arg Lys Glu Glu
130 135 140

tta tgg gag aaa ctg gca aag cag ggc gaa ctg ccc agg gat gtg cgc 480
Leu Trp Glu Lys Leu Ala Lys Gln Gly Glu Leu Pro Arg Asp Val Arg
145 150 155 160

aag gca cag gcc cga ctc ctt agc cct ccc aca cca aag gcc aaa cct 528
Lys Ala Gln Ala Arg Leu Leu Ser Pro Pro Thr Pro Lys Ala Lys Pro
165 170 175

ggg ccc cag gac atc att gag cga ccc ttc tat gac ctc tgg aac cca 576
Gly Pro Gln Asp Ile Ile Glu Arg Pro Phe Tyr Asp Leu Trp Asn Pro
180 185 190

gac aac cct ctg gac acg cct ttg att ggt cag gat gca ttt ttt ctg 624
Asp Asn Pro Leu Asp Thr Pro Leu Ile Gly Gln Asp Ala Phe Phe Leu
195 200 205

gaa cag acc aag aag aaa ggc gtg agg cgg cca caa cgc ctc cac atc 672
Glu Gln Thr Lys Lys Lys Gly Val Arg Arg Pro Gln Arg Leu His Ile
210 215 220

aag cct tcc cag gtg cct gca gtg gag gtg att cct gca gga gcc tcc 720
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Ser Gln Ala Asp Ser Gly Phe Leu Gly Leu Arg Pro Thr Ser Val Asp

20 25 30

ccc gct ctg agg cgg cgg cgg cgg ggc ccc aga aac aag aag cgc ggc 147

Pro Ala Leu Arg Arg Arg Arg Arg Pro Arg Asn Lys Lys Arg Gly

35 40 45

tgg agg agg ctc gcc gag gag ccg ctg ggg tta gag gtc gac cag ttc 195

Trp Arg Arg Leu Ala Glu Glu Pro Leu Gly Leu Glu Val Asp Gln Phe

50 55 60

ctg gaa gac gtc cgg cta cag gag cgc acg acc ggt ggc ttg ttg gca 243

Leu Glu Asp Val Arg Leu Gln Glu Arg Thr Thr Gly Gly Leu Leu Ala

65 70 75

gag gcc cca aac gaa aag ctc ttc ttc gtg gac aca gga ttc aag aga 291

Glu Ala Pro Asn Glu Lys Leu Phe Phe Val Asp Thr Gly Phe Lys Arg

80 85 90 95

aaa gaa cca aga aag aag agg acc ttg gtc cag aag aag tca cag cgt 339

Lys Glu Pro Arg Lys Lys Arg Thr Leu Val Gln Lys Lys Ser Gln Arg

100 105 110

ctc cag aaa ccc tta cgg gtt gac ctt gcc ctt gag aat cat tct aag 387

Leu Gln Lys Pro Leu Arg Val Asp Leu Ala Leu Glu Asn His Ser Lys

115 120 125

atc cct gct ccc aaa gac atc ctc gca cat cag gtc cct aat gcc aag 435

Ile Pro Ala Pro Lys Asp Ile Leu Ala His Gln Val Pro Asn Ala Lys

130 135 140

aag ctc agg cga aag gag gag tta tgg gag aaa ctg gca aag cag ggc 483

Lys Leu Arg Arg Lys Glu Glu Leu Trp Glu Lys Leu Ala Lys Gln Gly

145 150 155

gaa ctg ccc agg gat gtg cgc aag gca cag gcc cga ctc ctt agc cct 531
Glu Leu Pro Arg Asp Val Arg Lys Ala Gln Ala Arg Leu Leu Ser Pro
160 165 170 175

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Pro Thr Pro Lys Ala Lys Pro Gly Pro Gln Asp Ile Ile Glu Arg Pro
180 185 190

ttc tat gac ctc tgg aac cca gac aac cct ctg gac acg cct ttg att 627
Phe Tyr Asp Leu Trp Asn Pro Asp Asn Pro Leu Asp Thr Pro Leu Ile
195 200 205

ggt cag gat gca ttt ttt ctg gaa cag acc aag aag aaa ggc gtg agg 675
Gly Gln Asp Ala Phe Phe Leu Glu Gln Thr Lys Lys Lys Gly Val Arg
210 215 220

cgg cca caa cgc ctc cac atc aag cct tcc cag gtg cct gca gtg gag 723
Arg Pro Gln Arg Leu His Ile Lys Pro Ser Gln Val Pro Ala Val Glu
225 230 235

gtg att cct gca gga gcc tcc tac aac cca acc ttt gaa gat cac cag 771
Val Ile Pro Ala Gly Ala Ser Tyr Asn Pro Thr Phe Glu Asp His Gln
240 245 250 255

gcc ctg ctt cga gag gcc cat gag gtg gag ctg cag cgt gag aaa gag 819
Ala Leu Leu Arg Glu Ala His Glu Val Glu Leu Gln Arg Glu Lys Glu
260 265 270

gca gaa aag ctg gag cga cag ctg gcc ctg ccc acc tca gag caa gct 867
Ala Glu Lys Leu Glu Arg Gln Leu Ala Leu Pro Thr Ser Glu Gln Ala
275 280 285

gcc acc cag gag tcc gtg ttt cgg gag atg tgt gag ggc ctg ctg gag 915
Ala Thr Gln Glu Ser Val Phe Arg Glu Met Cys Glu Gly Leu Leu Glu
290 295 300

gag tct gat ggt gag gat gag cat gag gca ggc cgt gcc ggg cag cca 963
Glu Ser Asp Gly Glu Asp Glu His Glu Ala Gly Arg Ala Gly Gln Pro
305 310 315

gag gct ggt gat ggg acc acc gag atc tca ccc act ggt gct gct ggt 1011
Glu Ala Gly Asp Gly Thr Thr Glu Ile Ser Pro Thr Gly Ala Ala Gly
320 325 330 335

cct gag aag agg atg gag aag aag acg gag cag cag cgg cgg gag 1059

Pro Glu Lys Arg Met Glu Lys Lys Thr Glu Gln Gln Arg Arg Arg Glu
340 345 350

aaa gct gct cgc aag ctg cgg gtg cag cag gct gca ctg agg gca gcc 1107
Lys Ala Ala Arg Lys Leu Arg Val Gln Gln Ala Ala Leu Arg Ala Ala
355 360 365

cgg ctt cag cac caa gaa ctt ttc agg ctg cgt ggg atc aag gcc cag 1155
Arg Leu Gln His Gln Glu Leu Phe Arg Leu Arg Gly Ile Lys Ala Gln
370 375 380

gtg gcc cga agg ctg gca gaa ctg gca cgc cgg agg gag cag cgg cgc 1203
Val Ala Arg Arg Leu Ala Glu Leu Ala Arg Arg Arg Glu Gln Arg Arg
385 390 395

ata cgg cga ctg gca gag gct gac aag ccc cga agg ctg gga cgg ctc 1251
Ile Arg Arg Leu Ala Glu Ala Asp Lys Pro Arg Arg Leu Gly Arg Leu
400 405 410 415

aag tac cag gct cct gac att gat gtg cag ctc agc tct gag ttg tct 1299
Lys Tyr Gln Ala Pro Asp Ile Asp Val Gln Leu Ser Ser Glu Leu Ser
420 425 430

ggc tca ctc agg aca ctg aag cca gaa ggt cac att ctc cga gac agg 1347
Gly Ser Leu Arg Thr Leu Lys Pro Glu Gly His Ile Leu Arg Asp Arg
435 440 445

ttc aag agc ttc cag aag aga aat atg att gag ccc cga gaa cga gcc 1395
Phe Lys Ser Phe Gln Lys Arg Asn Met Ile Glu Pro Arg Glu Arg Ala
450 455 460

aag ttc aag cgc aaa tac aaa gtg aag ctg gtg gag aag cgg gcc tac 1443
Lys Phe Lys Arg Lys Tyr Lys Val Lys Leu Val Glu Lys Arg Ala Tyr
465 470 475

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Arg Glu Ile Gln Leu
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Ala Gly Ser Ile Tyr Arg Glu Phe Glu Arg Leu Ile His Cys Tyr Asp
35 40 45

Glu Glu Val Val Lys Glu Leu Met Pro Leu Val Val Asn Val Leu Glu
50 55 60

Asn Leu Asp Ser Val Leu Ser Glu Asn Gln Glu His Glu Val Glu Leu
65 70 75 80

Glu Leu Leu Arg Glu Asp Asn Glu Gln Leu Leu Thr Gln Tyr Glu Arg
85 90 95

Glu Lys Ala Leu Arg Lys Gln Ala Glu Glu Lys Phe Ile Glu Phe Glu
100 105 110

Asp Ala Leu Glu Gln Glu Lys Lys Glu Leu Gln Ile Gln Val Glu His
115 120 125

Tyr Glu Phe Gln Thr Arg Gln Leu Glu Leu Lys Ala Lys Asn Tyr Ala
130 135 140

Asp Gln Ile Ser Arg Leu Glu Glu Arg Glu Ser Glu Met Lys Lys Glu
145 150 155 160

Tyr Asn Ala Leu His Gln Arg His Thr Glu Met Ile Gln Thr Tyr Val
165 170 175

Glu His Ile Glu Arg Ser Lys Met Gln Gln Val Gly Gly Ser Gly Gln
180 185 190

Thr Glu Ser Ser Leu Pro Gly Arg Arg Lys Glu Arg Pro Thr Ser Leu
195 200 205

Asn Val Phe Pro Leu Ala Asp Gly Met Cys Pro Asn Asp Glu Met Ser
210 215 220

Glu Ser Gly Gln Ser Ser Ala Ala Ala Thr Pro Ser Thr Thr Gly Thr
225 230 235 240

Lys Ser Asn Thr Pro Thr Ser Ser Val Pro Ser Ala Ala Val Thr Pro
245 250 255

Leu Asn Glu Ser Leu Gln Pro Leu Gly Asp Tyr Val Ser Val Thr Lys
260 265 270

Asn Asn Lys Gln Ala Arg Glu Lys Arg Asn Ser Arg Asn Met Glu Val
275 280 285

Gln Val Thr Gln Glu Met Arg Asn Val Ser Ile Gly Met Gly Ser Ser
290 295 300

Asp Glu Trp Ser Asp Val Gln Asp Ile Ile Asp Ser Thr Pro Glu Leu
305 310 315 320

Asp Val Cys Pro Glu Thr Arg Leu Glu Arg Thr Gly Ser Ser Pro Thr
325 330 335

Gln Gly Ile Val Asn Lys Ala Phe Gly Ile Asn Thr Asp Ser Leu Tyr
340 345 350

His Glu Leu Ser Thr Ala Gly Ser Glu Val Ile Gly Asp Val Asp Glu
355 360 365

Gly Ala Asp Leu Leu Gly Glu Phe Ser Val Arg Asp Asp Phe Phe Gly
370 375 380

Met Gly Lys Glu Val Gly Asn Leu Leu Leu Glu Asn Ser Gln Leu Leu
385 390 395 400

Glu Thr Lys Asn Ala Leu Asn Val Val Lys Asn Asp Leu Ile Ala Lys
405 410 415

Val Asp Gln Leu Ser Gly Glu Gln Glu Val Leu Lys Gly Glu Leu Glu
420 425 430

Ala Ala Lys Gln Ala Lys Val Lys Leu Glu Asn Arg Ile Lys Glu Leu
435 440 445

Glu Glu Glu Leu Lys Arg Val Lys Ser Glu Ala Val Thr Ala Arg Arg
450 455 460

Glu Pro Arg Glu Glu Val Glu Asp Val Ser Ser Tyr Leu Cys Thr Glu
465 470 475 480

Leu Asp Lys Ile Pro Met Ala Gln Arg Arg Arg Phe Thr Arg Val Glu
485 490 495

Met Ala Arg Val Leu Met Glu Arg Asn Gln Tyr Lys Glu Arg Leu Met
500 505 510

Glu Leu Gln Glu Ala Val Arg Trp Thr Glu Met Ile Arg Ala Ser Arg
515 520 525

Glu His Pro Ser Val Gln Glu Lys Lys Lys Ser Thr Ile Trp Gln Phe
530 535 540

Phe Ser Arg Leu Phe Ser Ser Ser Ser Ser Pro Pro Pro Ala Lys Arg
545 550 555 560

Ser Tyr Pro Ser Val Asn Ile His Tyr Lys Ser Pro Thr Ala Ala Gly
565 570 575

Phe Ser Gln Arg Arg Ser His Ala Leu Cys Gln Ile Ser Ala Gly Ser
580 585 590

Arg Pro Leu Glu Phe Phe Pro Asp Asp Asp Cys Thr Ser Ser Ala Arg
595 600 605

Arg Glu Gln Lys Arg Glu Gln Tyr Arg Gln Val Arg Glu His Val Arg
610 615 620

Asn Asp Asp Gly Arg Leu Gln Ala Cys Gly Trp Ser Leu Pro Ala Lys
625 630 635 640

Tyr Lys Gln Leu Ser Pro Asn Gly Gly Gln Glu Asp Thr Arg Met Lys
645 650 655

Asn Val Pro Val Pro Val Tyr Cys Arg Pro Leu Val Glu Lys Asp Pro
660 665 670

Ser Thr Lys Leu Trp Cys Ala Ala Gly Val Asn Leu Ser Gly Trp Lys
675 680 685

Pro His Glu Glu Asp Ser Ser Asn Gly Pro Lys Pro Val Pro Gly Arg
690 695 700

Asp Pro Leu Thr Cys Asp Arg Glu Gly Glu Gly Glu Pro Lys Ser Thr
705 710 715 720

His Pro Ser Pro Glu Lys Lys Lys Ala Lys Glu Thr Pro Glu Ala Asp
725 730 735

Ala Thr Ser Ser Arg Val Trp Ile Leu Thr Ser Thr Leu Thr Thr Ser
740 745 750

Lys Val Val Ile Ile Asp Ala Asn Gln Pro Gly Thr Ile Val Asp Gln
755 760 765

Phe Thr Val Cys Asn Ala His Val Leu Cys Ile Ser Ser Ile Pro Ala
770 775 780

Ala Ser Asp Ser Asp Tyr Pro Pro Gly Glu Met Phe Leu Asp Ser Asp
785 790 795 800

Val Asn Pro Glu Asp Ser Gly Ala Asp Gly Val Leu Ala Gly Ile Thr
805 810 815

Leu Val Gly Cys Ala Thr Arg Cys Asn Val Pro Arg Ser Asn Cys Ser
820 825 830

Ser Arg Gly Asp Thr Pro Val Leu Asp Lys Gly Gln Gly Asp Val Ala
835 840 845

Thr Thr Ala Asn Gly Lys Val Asn Pro Ser Gln Ser Thr Glu Glu Ala
850 855 860

Thr Glu Ala Thr Glu Val Pro Asp Pro Gly Pro Ser Glu Ser Glu Ala
865 870 875 880

Thr Thr Val Arg Pro Gly Pro Leu Thr Glu His Val Phe Thr Asp Pro
885 890 895

Ala Pro Thr Pro Ser Ser Ser Thr Gln Pro Ala Ser Glu Asn Gly Ser
900 905 910

Glu Ser Asn Gly Thr Ile Val Gln Pro Gln Val Glu Pro Ser Gly Glu
915 920 925

Leu Ser Thr Thr Thr Ser Ser Ala Ala Pro Thr Met Trp Leu Gly Ala
930 935 940

Gln Asn Gly Trp Leu Tyr Val His Ser Ala Val Ala Asn Trp Lys Lys
945 950 955 960

Cys Leu His Ser Ile Lys Leu Lys Asp Ser Val Leu Ser Leu Val His
965 970 975

Val Lys Gly Arg Val Leu Val Ala Leu Ala Asp Gly Thr Leu Ala Ile
980 985 990

Phe His Arg Gly Glu Asp Gly Gln Trp Asp Leu Ser Asn Tyr His Leu
995 1000 1005

Met Asp Leu Gly His Pro His His Ser Ile Arg Cys Met Ala Val Val
1010 1015 1020

Asn Asp Arg Val Trp Cys Gly Tyr Lys Asn Lys Val His Val Ile Gln
1025 1030 1035 1040

Pro Lys Thr Met Gln Ile Glu Lys Ser Phe Asp Ala His Pro Arg Arg
1045 1050 1055

Glu Ser Gln Val Arg Gln Leu Ala Trp Ile Gly Asp Gly Val Trp Val
1060 1065 1070

Ser Ile Arg Leu Asp Ser Thr Leu Arg Leu Tyr His Ala His Thr His
1075 1080 1085

Gln His Leu Gln Asp Val Asp Ile Glu Pro Tyr Val Ser Lys Met Leu
1090 1095 1100

Gly Thr Gly Lys Leu Gly Phe Ser Phe Val Arg Ile Thr Ala Leu Leu
1105 1110 1115 1120

Ile Ala Gly Asn Arg Leu Trp Val Gly Thr Gly Asn Gly Val Val Ile
1125 1130 1135

Ser Ile Pro Leu Thr Glu Thr Val Val Leu His Arg Gly Gln Leu Leu
1140 1145 1150

Gly Leu Arg Ala Asn Lys Thr Ser Pro Thr Ser Gly Glu Gly Thr Arg
1155 1160 1165

Pro Gly Gly Ile Ile His Val Tyr Gly Asp Asp Ser Ser Asp Lys Ala
1170 1175 1180

Ala Ser Ser Phe Ile Pro Tyr Cys Ser Met Ala Gln Ala Gln Leu Cys
1185 1190 1195 1200

Phe His Gly His Arg Asp Ala Val Lys Phe Phe Val Ser Val Pro Gly
1205 1210 1215

Asn Val Leu Ala Thr Leu Asn Gly Ser Val Leu Asp Ser Pro Ser Glu
1220 1225 1230

Gly Pro Gly Pro Ala Ala Pro Ala Ala Asp Ala Glu Gly Gln Lys Leu
1235 1240 1245

Lys Asn Ala Leu Val Leu Ser Gly Gly Glu Gly Tyr Ile Asp Phe Arg
1250 1255 1260

Ile Gly Asp Gly Glu Asp Asp Glu Thr Glu Glu Cys Ala Gly Asp Val
1265 1270 1275 1280

Asn Gln Thr Lys Pro Ser Leu Ser Lys Ala Glu Arg Ser His Ile Ile
1285 1290 1295

Val Trp Gln Val Ser Tyr Thr Pro Glu
1300 1305

<210> 10

<211> 1314

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<213> Mouse

<400> 10

Met Met Glu Ile Gln Met Asp Glu Gly Gly Gly Val Val Val Tyr Gln
1 5 10 15

Asp Asp Tyr Cys Ser Gly Ser Val Met Ser Glu Arg Val Ser Gly Leu
20 25 30

Ala Gly Ser Ile Tyr Arg Glu Phe Glu Arg Leu Ile His Cys Tyr Asp
35 40 45

Glu Glu Val Val Lys Glu Leu Met Pro Leu Val Val Asn Val Leu Glu
50 55 60

Asn Leu Asp Ser Val Leu Ser Glu Asn Gln Glu His Glu Val Glu Leu
65 70 75 80

Glu Leu Leu Arg Glu Asp Asn Glu Gln Leu Leu Thr Gln Tyr Glu Arg
85 90 95

Glu Lys Ala Leu Arg Lys Gln Ala Glu Glu Lys Phe Ile Glu Phe Glu
100 105 110

Asp Ala Leu Glu Gln Glu Lys Lys Glu Leu Gln Ile Gln Val Glu His
115 120 125

Tyr Glu Phe Gln Thr Arg Gln Leu Glu Leu Lys Ala Lys Asn Tyr Ala
130 135 140

Asp Gln Ile Ser Arg Leu Glu Glu Arg Glu Ser Glu Met Lys Lys Glu
145 150 155 160

Tyr Asn Ala Leu His Gln Arg His Thr Glu Met Ile Gln Thr Tyr Val
165 170 175

Glu His Ile Glu Arg Ser Lys Met Gln Gln Val Gly Gly Ser Gly Gln
180 185 190

Thr Glu Ser Ser Leu Pro Gly Arg Ser Pro Arg Gln Ser Trp Arg Lys
195 200 205

Ser Arg Lys Glu Arg Pro Thr Ser Leu Asn Val Phe Pro Leu Ala Asp
210 215 220

Gly Met Cys Pro Asn Asp Glu Met Ser Glu Ser Gly Gln Ser Ser Ala
225 230 235 240

Ala Ala Thr Pro Ser Thr Thr Gly Thr Lys Ser Asn Thr Pro Thr Ser
245 250 255

Ser Val Pro Ser Ala Ala Val Thr Pro Leu Asn Glu Ser Leu Gln Pro
260 265 270

Leu Gly Asp Tyr Val Ser Val Thr Lys Asn Asn Lys Gln Ala Arg Glu
275 280 285

Lys Arg Asn Ser Arg Asn Met Glu Val Gln Val Thr Gln Glu Met Arg
290 295 300

Asn Val Ser Ile Gly Met Gly Ser Ser Asp Glu Trp Ser Asp Val Gln
305 310 315 320

Asp Ile Ile Asp Ser Thr Pro Glu Leu Asp Val Cys Pro Glu Thr Arg
325 330 335

Leu Glu Arg Thr Gly Ser Ser Pro Thr Gln Gly Ile Val Asn Lys Ala
340 345 350

Phe Gly Ile Asn Thr Asp Ser Leu Tyr His Glu Leu Ser Thr Ala Gly
355 360 365

Ser Glu Val Ile Gly Asp Val Asp Glu Gly Ala Asp Leu Leu Gly Glu
370 375 380

Phe Ser Val Arg Asp Asp Phe Phe Gly Met Gly Lys Glu Val Gly Asn
385 390 395 400

Leu Leu Leu Glu Asn Ser Gln Leu Leu Glu Thr Lys Asn Ala Leu Asn
405 410 415

Val Val Lys Asn Asp Leu Ile Ala Lys Val Asp Gln Leu Ser Gly Glu
420 425 430

Gln Glu Val Leu Lys Gly Glu Leu Glu Ala Ala Lys Gln Ala Lys Val
435 440 445

Lys Leu Glu Asn Arg Ile Lys Glu Leu Glu Glu Glu Leu Lys Arg Val
450 455 460

Lys Ser Glu Ala Val Thr Ala Arg Arg Glu Pro Arg Glu Glu Val Glu
465 470 475 480

Asp Val Ser Ser Tyr Leu Cys Thr Glu Leu Asp Lys Ile Pro Met Ala
485 490 495

Gln Arg Arg Arg Phe Thr Arg Val Glu Met Ala Arg Val Leu Met Glu
500 505 510

Arg Asn Gln Tyr Lys Glu Arg Leu Met Glu Leu Gln Glu Ala Val Arg
515 520 525

Trp Thr Glu Met Ile Arg Ala Ser Arg Glu His Pro Ser Val Gln Glu
530 535 540

Lys Lys Lys Ser Thr Ile Trp Gln Phe Phe Ser Arg Leu Phe Ser Ser
545 550 555 560

Ser Ser Ser Pro Pro Pro Ala Lys Arg Ser Tyr Pro Ser Val Asn Ile
565 570 575

His Tyr Lys Ser Pro Thr Ala Ala Gly Phe Ser Gln Arg Arg Ser His
580 585 590

Ala Leu Cys Gln Ile Ser Ala Gly Ser Arg Pro Leu Glu Phe Phe Pro
595 600 605

Asp Asp Asp Cys Thr Ser Ser Ala Arg Arg Glu Gln Lys Arg Glu Gln
610 615 620

Tyr Arg Gln Val Arg Glu His Val Arg Asn Asp Asp Gly Arg Leu Gln
625 630 635 640

Ala Cys Gly Trp Ser Leu Pro Ala Lys Tyr Lys Gln Leu Ser Pro Asn
645 650 655

Gly Gly Gln Glu Asp Thr Arg Met Lys Asn Val Pro Val Pro Val Tyr
660 665 670

Cys Arg Pro Leu Val Glu Lys Asp Pro Ser Thr Lys Leu Trp Cys Ala
675 680 685

Ala Gly Val Asn Leu Ser Gly Trp Lys Pro His Glu Glu Asp Ser Ser
690 695 700

Asn Gly Pro Lys Pro Val Pro Gly Arg Asp Pro Leu Thr Cys Asp Arg
705 710 715 720

Glu Gly Glu Gly Glu Pro Lys Ser Thr His Pro Ser Pro Glu Lys Lys
725 730 735

Lys Ala Lys Glu Thr Pro Glu Ala Asp Ala Thr Ser Ser Arg Val Trp
740 745 750

Ile Leu Thr Ser Thr Leu Thr Thr Ser Lys Val Val Ile Ile Asp Ala
755 760 765

Asn Gln Pro Gly Thr Ile Val Asp Gln Phe Thr Val Cys Asn Ala His
770 775 780

Val Leu Cys Ile Ser Ser Ile Pro Ala Ala Ser Asp Ser Asp Tyr Pro
785 790 795 800

Pro Gly Glu Met Phe Leu Asp Ser Asp Val Asn Pro Glu Asp Ser Gly
805 810 815

Ala Asp Gly Val Leu Ala Gly Ile Thr Leu Val Gly Cys Ala Thr Arg
820 825 830

Cys Asn Val Pro Arg Ser Asn Cys Ser Ser Arg Gly Asp Thr Pro Val
835 840 845

Leu Asp Lys Gly Gln Gly Asp Val Ala Thr Thr Ala Asn Gly Lys Val
850 855 860

Asn Pro Ser Gln Ser Thr Glu Glu Ala Thr Glu Ala Thr Glu Val Pro
865 870 875 880

Asp Pro Gly Pro Ser Glu Ser Glu Ala Thr Thr Val Arg Pro Gly Pro
885 890 895

Leu Thr Glu His Val Phe Thr Asp Pro Ala Pro Thr Pro Ser Ser Ser
900 905 910

Thr Gln Pro Ala Ser Glu Asn Gly Ser Glu Ser Asn Gly Thr Ile Val
915 920 925

Gln Pro Gln Val Glu Pro Ser Gly Glu Leu Ser Thr Thr Thr Ser Ser
930 935 940

Ala Ala Pro Thr Met Trp Leu Gly Ala Gln Asn Gly Trp Leu Tyr Val
945 950 955 960

His Ser Ala Val Ala Asn Trp Lys Lys Cys Leu His Ser Ile Lys Leu
965 970 975

Lys Asp Ser Val Leu Ser Leu Val His Val Lys Gly Arg Val Leu Val
980 985 990

Ala Leu Ala Asp Gly Thr Leu Ala Ile Phe His Arg Gly Glu Asp Gly
995 1000 1005

Gln Trp Asp Leu Ser Asn Tyr His Leu Met Asp Leu Gly His Pro His
1010 1015 1020

His Ser Ile Arg Cys Met Ala Val Val Asn Asp Arg Val Trp Cys Gly
1025 1030 1035 1040

Tyr Lys Asn Lys Val His Val Ile Gln Pro Lys Thr Met Gln Ile Glu
1045 1050 1055

Lys Ser Phe Asp Ala His Pro Arg Arg Glu Ser Gln Val Arg Gln Leu
1060 1065 1070

Ala Trp Ile Gly Asp Gly Val Trp Val Ser Ile Arg Leu Asp Ser Thr
1075 1080 1085

Leu Arg Leu Tyr His Ala His Thr His Gln His Leu Gln Asp Val Asp
1090 1095 1100

Ile Glu Pro Tyr Val Ser Lys Met Leu Gly Thr Gly Lys Leu Gly Phe
1105 1110 1115 1120

Ser Phe Val Arg Ile Thr Ala Leu Leu Ile Ala Gly Asn Arg Leu Trp
1125 1130 1135

Val Gly Thr Gly Asn Gly Val Val Ile Ser Ile Pro Leu Thr Glu Thr
1140 1145 1150

Val Val Leu His Arg Gly Gln Leu Leu Gly Leu Arg Ala Asn Lys Thr
1155 1160 1165

Ser Pro Thr Ser Gly Glu Gly Thr Arg Pro Gly Gly Ile Ile His Val
1170 1175 1180

Tyr Gly Asp Asp Ser Ser Asp Lys Ala Ala Ser Ser Phe Ile Pro Tyr
1185 1190 1195 1200

Cys Ser Met Ala Gln Ala Gln Leu Cys Phe His Gly His Arg Asp Ala
1205 1210 1215

Val Lys Phe Phe Val Ser Val Pro Gly Asn Val Leu Ala Thr Leu Asn
1220 1225 1230

Gly Ser Val Leu Asp Ser Pro Ser Glu Gly Pro Gly Pro Ala Ala Pro
1235 1240 1245

Ala Ala Asp Ala Glu Gly Gln Lys Leu Lys Asn Ala Leu Val Leu Ser
1250 1255 1260

Gly Gly Glu Gly Tyr Ile Asp Phe Arg Ile Gly Asp Gly Glu Asp Asp
1265 1270 1275 1280

Glu Thr Glu Glu Cys Ala Gly Asp Val Asn Gln Thr Lys Pro Ser Leu
1285 1290 1295

Ser Lys Ala Glu Arg Ser His Ile Ile Val Trp Gln Val Ser Tyr Thr
1300 1305 1310

Pro Glu

<210> 11

<211> 1337

<212> PRT

<213> Mouse

<400> 11

Met Met Glu Ile Gln Met Asp Glu Gly Gly Gly Val Val Val Tyr Gln
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Asp Asp Tyr Cys Ser Gly Ser Val Met Ser Glu Arg Val Ser Gly Leu
20 25 30

Ala Gly Ser Ile Tyr Arg Glu Phe Glu Arg Leu Ile His Cys Tyr Asp
35 40 45

Glu Glu Val Val Lys Glu Leu Met Pro Leu Val Val Asn Val Leu Glu
50 55 60

Asn Leu Asp Ser Val Leu Ser Glu Asn Gln Glu His Glu Val Glu Leu
65 70 75 80

Glu Leu Leu Arg Glu Asp Asn Glu Gln Leu Leu Thr Gln Tyr Glu Arg
85 90 95

Glu Lys Ala Leu Arg Lys Gln Ala Glu Glu Lys Phe Ile Glu Phe Glu
100 105 110

Asp Ala Leu Glu Gln Glu Lys Lys Glu Leu Gln Ile Gln Val Glu His
115 120 125

Tyr Glu Phe Gln Thr Arg Gln Leu Glu Leu Lys Ala Lys Asn Tyr Ala
130 135 140

Asp Gln Ile Ser Arg Leu Glu Glu Arg Glu Ser Glu Met Lys Lys Glu
145 150 155 160

Tyr Asn Ala Leu His Gln Arg His Thr Glu Met Ile Gln Thr Tyr Val
165 170 175

Glu His Ile Glu Arg Ser Lys Met Gln Gln Val Gly Gly Ser Gly Gln
180 185 190

Thr Glu Ser Ser Leu Pro Gly Arg Ser Arg Lys Glu Arg Pro Thr Ser
195 200 205

Leu Asn Val Phe Pro Leu Ala Asp Gly Met Val Arg Ala Gln Met Gly
210 215 220

Gly Lys Leu Val Pro Ala Gly Asp His Trp His Leu Ser Asp Leu Gly
225 230 235 240

Gln Leu Gln Ser Ser Ser Tyr Gln Cys Pro Asn Asp Glu Met Ser
245 250 255

Glu Ser Gly Gln Ser Ser Ala Ala Ala Thr Pro Ser Thr Thr Gly Thr
260 265 270

Lys Ser Asn Thr Pro Thr Ser Ser Val Pro Ser Ala Ala Val Thr Pro
275 280 285

Leu Asn Glu Ser Leu Gln Pro Leu Gly Asp Tyr Val Ser Val Thr Lys
290 295 300

Asn Asn Lys Gln Ala Arg Glu Lys Arg Asn Ser Arg Asn Met Glu Val
305 310 315 320

Gln Val Thr Gln Glu Met Arg Asn Val Ser Ile Gly Met Gly Ser Ser
325 330 335

Asp Glu Trp Ser Asp Val Gln Asp Ile Ile Asp Ser Thr Pro Glu Leu
340 345 350

Asp Val Cys Pro Glu Thr Arg Leu Glu Arg Thr Gly Ser Ser Pro Thr
355 360 365

Gln Gly Ile Val Asn Lys Ala Phe Gly Ile Asn Thr Asp Ser Leu Tyr
370 375 380

His Glu Leu Ser Thr Ala Gly Ser Glu Val Ile Gly Asp Val Asp Glu
385 390 395 400

Gly Ala Asp Leu Leu Gly Glu Phe Ser Val Arg Asp Asp Phe Phe Gly
405 410 415

Met Gly Lys Glu Val Gly Asn Leu Leu Leu Glu Asn Ser Gln Leu Leu
420 425 430

Glu Thr Lys Asn Ala Leu Asn Val Val Lys Asn Asp Leu Ile Ala Lys
435 440 445

Val Asp Gln Leu Ser Gly Glu Gln Glu Val Leu Lys Gly Glu Leu Glu
450 455 460

Ala Ala Lys Gln Ala Lys Val Lys Leu Glu Asn Arg Ile Lys Glu Leu
465 470 475 480

Glu Glu Glu Leu Lys Arg Val Lys Ser Glu Ala Val Thr Ala Arg Arg
485 490 495

Glu Pro Arg Glu Glu Val Glu Asp Val Ser Ser Tyr Leu Cys Thr Glu
500 505 510

Leu Asp Lys Ile Pro Met Ala Gln Arg Arg Arg Phe Thr Arg Val Glu
515 520 525

Met Ala Arg Val Leu Met Glu Arg Asn Gln Tyr Lys Glu Arg Leu Met
530 535 540

Glu Leu Gln Glu Ala Val Arg Trp Thr Glu Met Ile Arg Ala Ser Arg
545 550 555 560

Glu His Pro Ser Val Gln Glu Lys Lys Lys Ser Thr Ile Trp Gln Phe
565 570 575

Phe Ser Arg Leu Phe Ser Ser Ser Ser Pro Pro Pro Ala Lys Arg
580 585 590

Ser Tyr Pro Ser Val Asn Ile His Tyr Lys Ser Pro Thr Ala Ala Gly
595 600 605

Phe Ser Gln Arg Arg Ser His Ala Leu Cys Gln Ile Ser Ala Gly Ser
610 615 620

Arg Pro Leu Glu Phe Phe Pro Asp Asp Asp Cys Thr Ser Ser Ala Arg
625 630 635 640

Arg Glu Gln Lys Arg Glu Gln Tyr Arg Gln Val Arg Glu His Val Arg
645 650 655

Asn Asp Asp Gly Arg Leu Gln Ala Cys Gly Trp Ser Leu Pro Ala Lys
660 665 670

Tyr Lys Gln Leu Ser Pro Asn Gly Gly Gln Glu Asp Thr Arg Met Lys
675 680 685

Asn Val Pro Val Pro Val Tyr Cys Arg Pro Leu Val Glu Lys Asp Pro
690 695 700

Ser Thr Lys Leu Trp Cys Ala Ala Gly Val Asn Leu Ser Gly Trp Lys
705 710 715 720

Pro His Glu Glu Asp Ser Ser Asn Gly Pro Lys Pro Val Pro Gly Arg
725 730 735

Asp Pro Leu Thr Cys Asp Arg Glu Gly Glu Gly Glu Pro Lys Ser Thr
740 745 750

His Pro Ser Pro Glu Lys Lys Lys Ala Lys Glu Thr Pro Glu Ala Asp
755 760 765

Ala Thr Ser Ser Arg Val Trp Ile Leu Thr Ser Thr Leu Thr Thr Ser
770 775 780

Lys Val Val Ile Ile Asp Ala Asn Gln Pro Gly Thr Ile Val Asp Gln
785 790 795 800

Phe Thr Val Cys Asn Ala His Val Leu Cys Ile Ser Ser Ile Pro Ala
805 810 815

Ala Ser Asp Ser Asp Tyr Pro Pro Gly Glu Met Phe Leu Asp Ser Asp
820 825 830

Val Asn Pro Glu Asp Ser Gly Ala Asp Gly Val Leu Ala Gly Ile Thr
835 840 845

Leu Val Gly Cys Ala Thr Arg Cys Asn Val Pro Arg Ser Asn Cys Ser
850 855 860

Ser Arg Gly Asp Thr Pro Val Leu Asp Lys Gly Gln Gly Asp Val Ala
865 870 875 880

Thr Thr Ala Asn Gly Lys Val Asn Pro Ser Gln Ser Thr Glu Glu Ala
885 890 895

Thr Glu Ala Thr Glu Val Pro Asp Pro Gly Pro Ser Glu Ser Glu Ala
900 905 910

Thr Thr Val Arg Pro Gly Pro Leu Thr Glu His Val Phe Thr Asp Pro
915 920 925

Ala Pro Thr Pro Ser Ser Ser Thr Gln Pro Ala Ser Glu Asn Gly Ser
930 935 940

Glu Ser Asn Gly Thr Ile Val Gln Pro Gln Val Glu Pro Ser Gly Glu
945 950 955 960

Leu Ser Thr Thr Thr Ser Ser Ala Ala Pro Thr Met Trp Leu Gly Ala
965 970 975

Gln Asn Gly Trp Leu Tyr Val His Ser Ala Val Ala Asn Trp Lys Lys
980 985 990

Cys Leu His Ser Ile Lys Leu Lys Asp Ser Val Leu Ser Leu Val His
995 1000 1005

Val Lys Gly Arg Val Leu Val Ala Leu Ala Asp Gly Thr Leu Ala Ile
1010 1015 1020

Phe His Arg Gly Glu Asp Gly Gln Trp Asp Leu Ser Asn Tyr His Leu
1025 1030 1035 1040

Met Asp Leu Gly His Pro His His Ser Ile Arg Cys Met Ala Val Val
1045 1050 1055

Asn Asp Arg Val Trp Cys Gly Tyr Lys Asn Lys Val His Val Ile Gln
1060 1065 1070

Pro Lys Thr Met Gln Ile Glu Lys Ser Phe Asp Ala His Pro Arg Arg
1075 1080 1085

Glu Ser Gln Val Arg Gln Leu Ala Trp Ile Gly Asp Gly Val Trp Val
1090 1095 1100

Ser Ile Arg Leu Asp Ser Thr Leu Arg Leu Tyr His Ala His Thr His
1105 1110 1115 1120

Gln His Leu Gln Asp Val Asp Ile Glu Pro Tyr Val Ser Lys Met Leu
1125 1130 1135

Gly Thr Gly Lys Leu Gly Phe Ser Phe Val Arg Ile Thr Ala Leu Leu
1140 1145 1150

Ile Ala Gly Asn Arg Leu Trp Val Gly Thr Gly Asn Gly Val Val Ile
1155 1160 1165

Ser Ile Pro Leu Thr Glu Thr Val Val Leu His Arg Gly Gln Leu Leu
1170 1175 1180

Gly Leu Arg Ala Asn Lys Thr Ser Pro Thr Ser Gly Glu Gly Thr Arg
185 1190 1195 1200

Pro Gly Gly Ile Ile His Val Tyr Gly Asp Asp Ser Ser Asp Lys Ala
1205 1210 1215

Ala Ser Ser Phe Ile Pro Tyr Cys Ser Met Ala Gln Ala Gln Leu Cys
1220 1225 1230

Phe His Gly His Arg Asp Ala Val Lys Phe Phe Val Ser Val Pro Gly
1235 1240 1245

Asn Val Leu Ala Thr Leu Asn Gly Ser Val Leu Asp Ser Pro Ser Glu
1250 1255 1260

Gly Pro Gly Pro Ala Ala Pro Ala Ala Asp Ala Glu Gly Gln Lys Leu
265 1270 1275 1280

Lys Asn Ala Leu Val Leu Ser Gly Gly Glu Gly Tyr Ile Asp Phe Arg
1285 1290 1295

Ile Gly Asp Gly Glu Asp Asp Glu Thr Glu Glu Cys Ala Gly Asp Val
1300 1305 1310

Asn Gln Thr Lys Pro Ser Leu Ser Lys Ala Glu Arg Ser His Ile Ile
1315 1320 1325

Val Trp Gln Val Ser Tyr Thr Pro Glu
1330 1335

<210> 12

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<213> Mouse

<400> 12

Met Met Glu Ile Gln Met Asp Glu Gly Gly Gly Val Val Val Tyr Gln
1 5 10 15

Asp Asp Tyr Cys Ser Gly Ser Val Met Ser Glu Arg Val Ser Gly Leu
20 25 30

Ala Gly Ser Ile Tyr Arg Glu Phe Glu Arg Leu Ile His Cys Tyr Asp
35 40 45

Glu Glu Val Val Lys Glu Leu Met Pro Leu Val Val Asn Val Leu Glu
50 55 60

Asn Leu Asp Ser Val Leu Ser Glu Asn Gln Glu His Glu Val Glu Leu
65 70 75 80

Glu Leu Leu Arg Glu Asp Asn Glu Gln Leu Leu Thr Gln Tyr Glu Arg
85 90 95

Glu Lys Ala Leu Arg Lys Gln Ala Glu Glu Lys Phe Ile Glu Phe Glu
100 105 110

Asp Ala Leu Glu Gln Glu Lys Lys Glu Leu Gln Ile Gln Val Glu His
115 120 125

Tyr Glu Phe Gln Thr Arg Gln Leu Glu Leu Lys Ala Lys Asn Tyr Ala
130 135 140

Asp Gln Ile Ser Arg Leu Glu Glu Arg Glu Ser Glu Met Lys Lys Glu
145 150 155 160

Tyr Asn Ala Leu His Gln Arg His Thr Glu Met Ile Gln Thr Tyr Val
165 170 175

Glu His Ile Glu Arg Ser Lys Met Gln Gln Val Gly Gly Ser Gly Gln
180 185 190

Thr Glu Ser Ser Leu Pro Gly Arg Arg Lys Glu Arg Pro Thr Ser Leu
195 200 205

Asn Val Phe Pro Leu Ala Asp Gly Met Val Arg Ala Gln Met Gly Gly
210 215 220

Lys Leu Val Pro Ala Gly Asp His Trp His Leu Ser Asp Leu Gly Gln
225 230 235 240

Leu Gln Ser Ser Ser Ser Tyr Gln Cys Pro Asn Asp Glu Met Ser Glu
245 250 255

Ser Gly Gln Ser Ser Ala Ala Ala Thr Pro Ser Thr Thr Gly Thr Lys
260 265 270

Ser Asn Thr Pro Thr Ser Ser Val Pro Ser Ala Ala Val Thr Pro Leu
275 280 285

Asn Glu Ser Leu Gln Pro Leu Gly Asp Tyr Val Ser Val Thr Lys Asn
290 295 300

Asn Lys Gln Ala Arg Glu Lys Arg Asn Ser Arg Asn Met Glu Val Gln
305 310 315 320

Val Thr Gln Glu Met Arg Asn Val Ser Ile Gly Met Gly Ser Ser Asp
325 330 335

Glu Trp Ser Asp Val Gln Asp Ile Ile Asp Ser Thr Pro Glu Leu Asp
340 345 350

Val Cys Pro Glu Thr Arg Leu Glu Arg Thr Gly Ser Ser Pro Thr Gln
355 360 365

Gly Ile Val Asn Lys Ala Phe Gly Ile Asn Thr Asp Ser Leu Tyr His
370 375 380

Glu Leu Ser Thr Ala Gly Ser Glu Val Ile Gly Asp Val Asp Glu Gly
385 390 395 400

Ala Asp Leu Leu Gly Glu Phe Ser Val Arg Asp Asp Phe Phe Gly Met
405 410 415

Gly Lys Glu Val Gly Asn Leu Leu Leu Glu Asn Ser Gln Leu Leu Glu
420 425 430

Thr Lys Asn Ala Leu Asn Val Val Lys Asn Asp Leu Ile Ala Lys Val
435 440 445

Asp Gln Leu Ser Gly Glu Gln Glu Val Leu Lys Gly Glu Leu Glu Ala
450 455 460

Ala Lys Gln Ala Lys Val Lys Leu Glu Asn Arg Ile Lys Glu Leu Glu
465 470 475 480

Glu Glu Leu Lys Arg Val Lys Ser Glu Ala Val Thr Ala Arg Arg Glu
485 490 495

Pro Arg Glu Glu Val Glu Asp Val Ser Ser Tyr Leu Cys Thr Glu Leu
500 505 510

Asp Lys Ile Pro Met Ala Gln Arg Arg Arg Phe Thr Arg Val Glu Met
515 520 525

Ala Arg Val Leu Met Glu Arg Asn Gln Tyr Lys Glu Arg Leu Met Glu
530 535 540

Leu Gln Glu Ala Val Arg Trp Thr Glu Met Ile Arg Ala Ser Arg Glu
545 550 555 560

His Pro Ser Val Gln Glu Lys Lys Lys Ser Thr Ile Trp Gln Phe Phe
565 570 575

Ser Arg Leu Phe Ser Ser Ser Ser Ser Pro Pro Pro Ala Lys Arg Ser
580 585 590

Tyr Pro Ser Val Asn Ile His Tyr Lys Ser Pro Thr Ala Ala Gly Phe
595 600 605

Ser Gln Arg Arg Ser His Ala Leu Cys Gln Ile Ser Ala Gly Ser Arg
610 615 620

Pro Leu Glu Phe Phe Pro Asp Asp Asp Cys Thr Ser Ser Ala Arg Arg
625 630 635 640

Glu Gln Lys Arg Glu Gln Tyr Arg Gln Val Arg Glu His Val Arg Asn
645 650 655

Asp Asp Gly Arg Leu Gln Ala Cys Gly Trp Ser Leu Pro Ala Lys Tyr
660 665 670

Lys Gln Leu Ser Pro Asn Gly Gly Gln Glu Asp Thr Arg Met Lys Asn
675 680 685

Val Pro Val Pro Val Tyr Cys Arg Pro Leu Val Glu Lys Asp Pro Ser
690 695 700

Thr Lys Leu Trp Cys Ala Ala Gly Val Asn Leu Ser Gly Trp Lys Pro
705 710 715 720

His Glu Glu Asp Ser Ser Asn Gly Pro Lys Pro Val Pro Gly Arg Asp
725 730 735

Pro Leu Thr Cys Asp Arg Glu Gly Glu Gly Glu Pro Lys Ser Thr His
740 745 750

Pro Ser Pro Glu Lys Lys Lys Ala Lys Glu Thr Pro Glu Ala Asp Ala
755 760 765

Thr Ser Ser Arg Val Trp Ile Leu Thr Ser Thr Leu Thr Thr Ser Lys
770 775 780

Val Val Ile Ile Asp Ala Asn Gln Pro Gly Thr Ile Val Asp Gln Phe
785 790 795 800

Thr Val Cys Asn Ala His Val Leu Cys Ile Ser Ser Ile Pro Ala Ala
805 810 815

Ser Asp Ser Asp Tyr Pro Pro Gly Glu Met Phe Leu Asp Ser Asp Val
820 825 830

Asn Pro Glu Asp Ser Gly Ala Asp Gly Val Leu Ala Gly Ile Thr Leu
835 840 845

Val Gly Cys Ala Thr Arg Cys Asn Val Pro Arg Ser Asn Cys Ser Ser
850 855 860

Arg Gly Asp Thr Pro Val Leu Asp Lys Gly Gln Gly Asp Val Ala Thr
865 870 875 880

Thr Ala Asn Gly Lys Val Asn Pro Ser Gln Ser Thr Glu Glu Ala Thr
885 890 895

Glu Ala Thr Glu Val Pro Asp Pro Gly Pro Ser Glu Ser Glu Ala Thr
900 905 910

Thr Val Arg Pro Gly Pro Leu Thr Glu His Val Phe Thr Asp Pro Ala
915 920 925

Pro Thr Pro Ser Ser Ser Thr Gln Pro Ala Ser Glu Asn Gly Ser Glu
930 935 940

Ser Asn Gly Thr Ile Val Gln Pro Gln Val Glu Pro Ser Gly Glu Leu
945 950 955 960

Ser Thr Thr Thr Ser Ser Ala Ala Pro Thr Met Trp Leu Gly Ala Gln
965 970 975

Asn Gly Trp Leu Tyr Val His Ser Ala Val Ala Asn Trp Lys Lys Cys
980 985 990

Leu His Ser Ile Lys Leu Lys Asp Ser Val Leu Ser Leu Val His Val
995 1000 1005

Lys Gly Arg Val Leu Val Ala Leu Ala Asp Gly Thr Leu Ala Ile Phe
1010 1015 1020

His Arg Gly Glu Asp Gly Gln Trp Asp Leu Ser Asn Tyr His Leu Met
1025 1030 1035 1040

Asp Leu Gly His Pro His His Ser Ile Arg Cys Met Ala Val Val Asn
1045 1050 1055

Asp Arg Val Trp Cys Gly Tyr Lys Asn Lys Val His Val Ile Gln Pro
1060 1065 1070

Lys Thr Met Gln Ile Glu Lys Ser Phe Asp Ala His Pro Arg Arg Glu
1075 1080 1085

Ser Gln Val Arg Gln Leu Ala Trp Ile Gly Asp Gly Val Trp Val Ser
1090 1095 1100

Ile Arg Leu Asp Ser Thr Leu Arg Leu Tyr His Ala His Thr His Gln
1105 1110 1115 1120

His Leu Gln Asp Val Asp Ile Glu Pro Tyr Val Ser Lys Met Leu Gly
1125 1130 1135

Thr Gly Lys Leu Gly Phe Ser Phe Val Arg Ile Thr Ala Leu Leu Ile
1140 1145 1150

Ala Gly Asn Arg Leu Trp Val Gly Thr Gly Asn Gly Val Val Ile Ser
1155 1160 1165

Ile Pro Leu Thr Glu Thr Val Val Leu His Arg Gly Gln Leu Leu Gly
1170 1175 1180

Leu Arg Ala Asn Lys Thr Ser Pro Thr Ser Gly Glu Gly Thr Arg Pro
1185 1190 1195 1200

Gly Gly Ile Ile His Val Tyr Gly Asp Asp Ser Ser Asp Lys Ala Ala
1205 1210 1215

Ser Ser Phe Ile Pro Tyr Cys Ser Met Ala Gln Ala Gln Leu Cys Phe
1220 1225 1230

His Gly His Arg Asp Ala Val Lys Phe Phe Val Ser Val Pro Gly Asn
1235 1240 1245

Val Leu Ala Thr Leu Asn Gly Ser Val Leu Asp Ser Pro Ser Glu Gly
1250 1255 1260

Pro Gly Pro Ala Ala Pro Ala Ala Asp Ala Glu Gly Gln Lys Leu Lys
265 1270 1275 1280

Asn Ala Leu Val Leu Ser Gly Gly Glu Gly Tyr Ile Asp Phe Arg Ile
1285 1290 1295

Gly Asp Gly Glu Asp Asp Glu Thr Glu Glu Cys Ala Gly Asp Val Asn
1300 1305 1310

Gln Thr Lys Pro Ser Leu Ser Lys Ala Glu Arg Ser His Ile Ile Val
1315 1320 1325

Trp Gln Val Ser Tyr Thr Pro Glu
1330 1335

<210> 13

<211> 430

<212> PRT

<213> Mouse

<400> 13

Met Ser Gly Val Arg Pro Pro Ile Met Asn Gly Pro Met His Pro Arg
1 5 10 15

Pro Leu Val Ala Leu Leu Asp Gly Arg Asp Cys Thr Val Glu Met Pro
20 25 30

Ile Leu Lys Asp Val Ala Thr Val Ala Phe Cys Asp Ala Gln Ser Thr
35 40 45

Gln Glu Ile His Glu Lys Val Leu Asn Glu Ala Val Gly Ala Leu Met
50 55 60

Tyr His Thr Ile Thr Leu Thr Arg Glu Asp Leu Glu Lys Phe Lys Ala
65 70 75 80

Leu Arg Ile Ile Val Arg Ile Gly Ser Gly Phe Asp Asn Ile Asp Ile
85 90 95

Lys Ser Ala Gly Asp Leu Gly Ile Ala Val Cys Asn Val Pro Ala Ala
100 105 110

Ser Val Glu Glu Thr Ala Asp Ser Thr Leu Cys His Ile Leu Asn Leu
115 120 125

Tyr Arg Arg Thr Thr Trp Leu His Gln Ala Leu Arg Glu Gly Thr Arg
130 135 140

Val Gln Ser Val Glu Gln Ile Arg Glu Val Ala Ser Gly Ala Ala Arg
145 150 155 160

Ile Arg Gly Glu Thr Leu Gly Ile Ile Gly Leu Gly Arg Val Gly Gln
165 170 175

Ala Val Ala Leu Arg Ala Lys Ala Phe Gly Phe Asn Val Leu Phe Tyr
180 185 190

Asp Pro Tyr Leu Ser Asp Gly Ile Glu Arg Ala Leu Gly Leu Gln Arg
195 200 205

Val Ser Thr Leu Gln Asp Leu Leu Phe His Ser Asp Cys Val Thr Leu
210 215 220

His Cys Gly Leu Asn Glu His Asn His His Leu Ile Asn Asp Phe Thr
225 230 235 240

Val Lys Gln Met Arg Gln Gly Ala Phe Leu Val Asn Thr Ala Arg Gly
245 250 255

Gly Leu Val Asp Glu Lys Ala Val Ala Gln Ala Leu Lys Glu Gly Arg
260 265 270

Ile Arg Gly Ala Ala Leu Asp Val His Glu Ser Glu Pro Phe Ser Phe
275 280 285

Ser Gln Gly Pro Leu Lys Asp Ala Pro Asn Leu Ile Cys Thr Pro His
290 295 300

Ala Ala Trp Tyr Ser Glu Gln Ala Ser Ile Glu Met Arg Glu Glu Ala
305 310 315 320

Ala Arg Glu Ile Arg Arg Ala Ile Thr Gly Arg Ile Pro Asp Ser Leu
325 330 335

Lys Asn Cys Val Asn Lys Asp His Leu Thr Ala Ala Thr His Trp Ala
340 345 350

Ser Met Asp Pro Ala Val Val His Pro Glu Leu Asn Gly Ala Ala Tyr
355 360 365

Ser Arg Tyr Pro Pro Gly Val Val Ser Val Ala Pro Thr Gly Ile Pro
370 375 380

Ala Ala Val Glu Gly Ile Val Pro Ser Ala Met Ser Leu Ser His Gly
385 390 395 400

Leu Pro Pro Val Ala His Pro Pro His Ala Pro Ser Pro Gly Gln Thr
405 410 415

Val Lys Pro Glu Ala Asp Arg Asp His Thr Ser Asp Gln Leu
420 425 430

<210> 14

<211> 1508

<212> PRT

<213> Mouse

<400> 14

Met Met Ala Gly Glu Gly Ser Thr Ile Thr Ser Arg Ile Lys Asn Leu
1 5 10 15

Leu Arg Ser Pro Ser Ile Lys Leu Arg Arg Ser Lys Ala Gly Asn Arg
20 25 30

Arg Glu Asp Leu Ser Ser Lys Val Thr Leu Glu Lys Val Leu Gly Val
35 40 45

Thr Val Ser Gly Gly Arg Gly Leu Ala Cys Glu Pro Arg Ser Gly Leu
50 55 60

Val Ala Tyr Pro Ala Gly Cys Val Val Val Leu Phe Asn Pro Arg Lys
65 70 75 80

His Lys Gln His His Ile Leu Asn Ser Ser Arg Lys Thr Ile Thr Ala
85 90 95

Leu Ala Phe Ser Pro Asp Gly Lys Tyr Leu Val Thr Gly Glu Ser Gly
100 105 110

His Met Pro Ala Val Arg Val Trp Asp Val Ala Glu Arg Ser Gln Val
115 120 125

Ala Glu Leu Gln Glu His Lys Tyr Gly Val Ala Cys Val Ala Phe Ser
130 135 140

Pro Ser Ala Lys Tyr Ile Val Ser Val Gly Tyr Gln His Asp Met Ile
145 150 155 160

Val Asn Val Trp Ala Trp Lys Lys Asn Ile Val Val Ala Ser Asn Lys
165 170 175

Val Ser Ser Arg Val Thr Ala Val Ser Phe Ser Glu Asp Cys Ser Tyr
180 185 190

Phe Val Thr Ala Gly Asn Arg His Ile Lys Phe Trp Tyr Leu Asp Asp
195 200 205

Ser Lys Thr Ser Lys Val Asn Ala Thr Val Pro Leu Leu Gly Arg Ser
210 215 220

Gly Leu Leu Gly Glu Leu Arg Asn Asn Leu Phe Thr Asp Val Ala Cys
225 230 235 240

Gly Arg Gly Glu Lys Ala Asp Ser Thr Phe Cys Ile Thr Ser Ser Gly
245 250 255

Leu Leu Cys Glu Phe Ser Asp Arg Arg Leu Leu Asp Lys Trp Val Glu
260 265 270

Leu Arg Asn Thr Asp Ser Phe Thr Thr Thr Val Ala His Cys Ile Ser
275 280 285

Val Thr Gln Glu Tyr Ile Phe Cys Gly Cys Ala Asp Gly Thr Val Arg
290 295 300

Leu Phe Asn Pro Ser Asn Leu His Phe Leu Ser Thr Leu Pro Arg Pro
305 310 315 320

His Ala Leu Gly Thr Asp Ile Ala Ser Ile Thr Glu Ala Ser Arg Leu
325 330 335

Phe Ser Gly Gly Val Asn Ala Arg Tyr Pro Asp Thr Ile Ala Leu Thr
340 345 350

Phe Asp Pro Thr Asn Gln Trp Leu Ser Cys Val Tyr Asn Asp His Ser
355 360 365

Ile Tyr Val Trp Asp Val Arg Asp Pro Lys Lys Val Gly Lys Val Tyr
370 375 380

Ser Ala Leu Tyr His Ser Ser Cys Val Trp Ser Val Glu Val Tyr Pro
385 390 395 400

Glu Ile Lys Asp Ser His Gln Ala Cys Leu Pro Leu Ser Ser Phe Ile
405 410 415

Thr Cys Ser Ser Asp Asn Thr Ile Arg Leu Trp Asn Thr Glu Ser Ser
420 425 430

Gly Val His Gly Ser Thr Leu His Arg Asn Ile Leu Ser Asn Asp Leu
435 440 445

Ile Lys Ile Ile Tyr Val Asp Gly Asn Thr Gln Ala Leu Leu Asp Thr
450 455 460

Glu Leu Pro Gly Gly Asp Lys Ala Asp Gly Ser Leu Met Asp Pro Arg
465 470 475 480

Val Gly Ile Arg Ser Val Cys Ile Ser Pro Asn Gly Gln His Leu Ala
485 490 495

Ser Gly Asp Arg Met Gly Thr Leu Arg Ile His Glu Leu Gln Ser Leu
500 505 510

Ser Glu Met Leu Lys Val Glu Ala His Asp Ser Glu Ile Leu Cys Leu
515 520 525

Glu Tyr Ser Lys Pro Asp Thr Gly Leu Lys Leu Leu Ala Ser Ala Ser
530 535 540

Arg Asp Arg Leu Ile His Glu Leu Asp Ala Gly Arg Glu Tyr Ser Leu
545 550 555 560

Gln Gln Thr Leu Asp Glu His Ser Ser Ser Ile Thr Ala Val Lys Phe
565 570 575

Ala Ala Ser Asp Gly Gln Val Arg Met Ile Ser Cys Gly Ala Asp Lys
580 585 590

Ser Ile Tyr Phe Arg Thr Ala Gln Lys Ser Gly Glu Gly Val Gln Phe
595 600 605

Thr Arg Thr His His Val Val Arg Lys Thr Thr Leu Tyr Asp Met Asp
610 615 620

Val Glu Pro Ser Trp Lys Tyr Thr Ala Ile Gly Cys Gln Asp Arg Asn
625 630 635 640

Ile Arg Ile Phe Asn Ile Ser Ser Gly Lys Gln Lys Lys Leu Phe Lys
645 650 655

Gly Ser Gln Gly Glu Asp Gly Thr Leu Ile Lys Val Gln Thr Asp Pro
660 665 670

Ser Gly Ile Tyr Ile Ala Thr Ser Cys Ser Asp Lys Asn Leu Ser Ile
675 680 685

Phe Asp Phe Ser Ser Gly Glu Cys Val Ala Thr Met Phe Gly His Ser
690 695 700

Glu Ile Val Thr Gly Met Lys Phe Ser Asn Asp Cys Lys His Leu Ile
705 710 715 720

Ser Val Ser Gly Asp Ser Cys Ile Phe Val Trp Arg Leu Ser Ser Glu
725 730 735

Met Thr Ile Ser Met Arg Gln Arg Leu Arg Glu Arg Arg Gln Arg Gln
740 745 750

Arg Gly Ile Lys Gln Gln Gly Pro Thr Ser Pro Gln Arg Ala Ser Gly
755 760 765

Ala Lys Gln His His Ala Pro Val Val Pro Pro Ser Gly Pro Ala Leu
770 775 780

Ser Ser Asp Ser Asp Lys Glu Gly Glu Asp Glu Gly Thr Glu Glu Glu
785 790 795 800

Glu Leu Pro Ala Leu Pro Ile Leu Ser Lys Ser Thr Lys Lys Glu Leu
805 810 815

Ala Ser Gly Ser Ser Pro Ala Leu Leu Arg Ser Leu Ser His Trp Glu
820 825 830

Met Ser Arg Ala Gln Glu Thr Met Glu Tyr Leu Asp Pro Ala Pro Val
835 840 845

Ala Asn Thr Gly Pro Lys Arg Arg Gly Arg Trp Ala Gln Pro Gly Val
850 855 860

Glu Leu Ser Val Arg Ser Met Leu Asp Leu Arg Gln Ile Glu Thr Leu
865 870 875 880

Ala Pro Ser Pro Arg Gly Pro Ser Gln Asp Ser Leu Ala Val Ser Pro
885 890 895

Ala Gly Pro Gly Lys His Gly Pro Gln Ala Pro Glu Leu Ser Cys Val
900 905 910

Ser Gln Asn Glu Arg Ala Pro Arg Leu Gln Thr Ser Gln Pro Cys Ser
915 920 925

Cys Pro Asp Ile Ile Gln Leu Leu Ser Gln Glu Glu Gly Val Phe Ala
930 935 940

Gln Asp Leu Glu Pro Ala Pro Ile Glu Asp Gly Ile Val Tyr Pro Glu
945 950 955 960

Pro Ser Asp Ser Pro Thr Met Asp Thr Ser Ala Phe Gln Val Gln Ala
965 970 975

Pro Thr Gly Gly Ser Leu Gly Arg Met Tyr Pro Gly Ser Arg Gly Ser
980 985 990

Glu Lys His Ser Pro Asp Ser Ala Cys Ser Val Asp Tyr Ser Ser Ser
995 1000 1005

Arg Leu Ser Ser Pro Glu His Pro Asn Glu Asp Ser Glu Ser Thr Glu
1010 1015 1020

Pro Leu Ser Val Asp Gly Ile Ser Ser Asp Leu Glu Glu Pro Ala Glu
1025 1030 1035 1040

Gly Asp Glu Asp Glu Glu Glu Gly Gly Thr Gly Leu Cys Gly Leu
1045 1050 1055

Gln Glu Gly Gly Pro Arg Thr Pro Asp Gln Glu Gln Phe Leu Lys Gln
1060 1065 1070

Leu Phe Glu Thr Leu Ala Asn Gly Thr Ala Pro Gly Gly Pro Ala Arg
1075 1080 1085

Val Leu Glu Arg Thr Glu Ser Arg Ser Ile Ser Ser Arg Phe Leu Leu
1090 1095 1100

Gln Val Gln Thr Leu Pro Leu Arg Glu Pro Ser Leu Ser Ser Ser Gly
1105 1110 1115 1120

Leu Ala Leu Thr Ser Arg Pro Asp Gln Val Ser Gln Val Ser Gly Glu
1125 1130 1135

Gln Leu Lys Gly Ser Gly Ala Thr Pro Pro Gly Ala Pro Pro Glu Met
1140 1145 1150

Glu Pro Ser Ser Gly Asn Ser Gly Pro Lys Gln Val Ala Pro Val Leu
1155 1160 1165

Leu Thr Arg Arg Arg Asn Asn Leu Asp Asn Ser Trp Ala Ser Lys Lys
1170 1175 1180

Met Ala Ala Thr Arg Pro Leu Ala Gly Leu Gln Lys Ala Gln Ser Val
1185 1190 1195 1200

His Ser Leu Val Pro Gln Asp Glu Val Pro Ser Ser Arg Pro Leu Leu
1205 1210 1215

Phe Arg Glu Ala Glu Thr Gln Gly Ser Leu Gly Ser Leu Pro Gln Ala
1220 1225 1230

Gly Gly Cys Ser Ser Gln Pro His Ser Tyr Gln Asn His Thr Thr Ser
1235 1240 1245

Ser Met Ala Lys Leu Ala Arg Ser Ile Ser Val Gly Glu Asn Pro Gly
1250 1255 1260

Leu Ala Thr Glu Pro Gln Ala Pro Ala Pro Ile Arg Ile Ser Pro Phe
1265 1270 1275 1280

Asn Lys Leu Ala Leu Pro Ser Arg Ala His Leu Val Leu Asp Ile Pro
1285 1290 1295

Lys Pro Leu Pro Asp Arg Pro Thr Leu Thr Thr Phe Ser Pro Val Ser
1300 1305 1310

Lys Gly Leu Thr His Asn Glu Thr Glu Gln Ser Gly Pro Leu Arg Glu
1315 1320 1325

Pro Arg Lys Ala His Thr Thr Val Glu Lys His Ser Cys Leu Gly Glu
1330 1335 1340

Gly Thr Thr His Lys Ser Arg Thr Glu Cys Gln Ala Tyr Pro Gly Pro
345 1350 1355 1360

Asn His Pro Cys Arg Gln Gln Leu Pro Val Asn Asn Leu Leu Gln Ala
1365 1370 1375

Glu Ser Leu Gln Pro Leu Ser Pro Glu Lys Thr Arg Asn Pro Val Glu
1380 1385 1390

Ser Ser Arg Pro Gly Val Ala Leu Ser Gln Asp Ser Glu Leu Ala Leu
1395 1400 1405

Ser Leu Gln Gln Cys Glu Gln Leu Val Ala Glu Leu Gln Gly Asn Val
1410 1415 1420

Arg Gln Ala Val Glu Leu Tyr Arg Ala Val Thr Ser Cys Lys Thr Pro
425 1430 1435 1440

Ser Ala Glu Gln Ser His Ile Thr Arg Leu Leu Arg Asp Thr Phe Ser
1445 1450 1455

Pro Val Arg Gln Glu Leu Glu Val Leu Ala Gly Ala Val Leu Ser Ser
1460 1465 1470

Pro Gly Gly Ser Pro Gly Ala Val Ala Ala Glu Gln Thr Gln Ala Leu
1475 1480 1485

Leu Glu Gln Tyr Ser Glu Leu Leu Leu Arg Ala Val Glu Arg Arg Met
1490 1495 1500

Glu Arg Arg Leu
505

<210> 15
<211> 244
<212> PRT
<213> Mouse

<400> 15
Ser Ser Lys Tyr Ser Asn Glu Ser Arg Ser Gln Ala Asp Ser Gly Phe
1 5 10 15
Leu Gly Leu Arg Pro Thr Ser Val Asp Pro Ala Leu Arg Arg Arg Arg
20 25 30
Arg Gly Pro Arg Asn Lys Lys Arg Gly Trp Arg Arg Leu Ala Glu Glu
35 40 45
Pro Leu Gly Leu Glu Val Asp Gln Phe Leu Glu Asp Val Arg Leu Gln
50 55 60
Glu Arg Thr Thr Gly Gly Leu Leu Ala Glu Ala Pro Asn Glu Lys Leu
65 70 75 80
Phe Phe Val Asp Thr Gly Phe Lys Arg Lys Glu Pro Arg Lys Lys Arg
85 90 95
Thr Leu Val Gln Lys Lys Ser Gln Arg Leu Gln Lys Pro Leu Arg Val
100 105 110
Asp Leu Ala Leu Glu Asn His Ser Lys Ile Pro Ala Pro Lys Asp Ile
115 120 125
Leu Ala His Gln Val Pro Asn Ala Lys Lys Leu Arg Arg Lys Glu Glu
130 135 140
Leu Trp Glu Lys Leu Ala Lys Gln Gly Glu Leu Pro Arg Asp Val Arg
145 150 155 160
Lys Ala Gln Ala Arg Leu Leu Ser Pro Pro Thr Pro Lys Ala Lys Pro
165 170 175
Gly Pro Gln Asp Ile Ile Glu Arg Pro Phe Tyr Asp Leu Trp Asn Pro
180 185 190
Asp Asn Pro Leu Asp Thr Pro Leu Ile Gly Gln Asp Ala Phe Phe Leu
195 200 205

Glu Gln Thr Lys Lys Lys Gly Val Arg Arg Pro Gln Arg Leu His Ile
210 215 220

Lys Pro Ser Gln Val Pro Ala Val Glu Val Ile Pro Ala Gly Ala Ser
225 230 235 240

Tyr Asn Pro Thr

<210> 16

<211> 484

<212> PRT

<213> Mouse

<400> 16

Met Ala Ala Gly Gly Asn Arg Asp Gly Glu Lys Arg Gly Ser Arg Ser
1 5 10 15

Gln Ala Asp Ser Gly Phe Leu Gly Leu Arg Pro Thr Ser Val Asp Pro
20 25 30

Ala Leu Arg Arg Arg Arg Arg Gly Pro Arg Asn Lys Lys Arg Gly Trp
35 40 45

Arg Arg Leu Ala Glu Glu Pro Leu Gly Leu Glu Val Asp Gln Phe Leu
50 55 60

Glu Asp Val Arg Leu Gln Glu Arg Thr Thr Gly Gly Leu Leu Ala Glu
65 70 75 80

Ala Pro Asn Glu Lys Leu Phe Phe Val Asp Thr Gly Phe Lys Arg Lys
85 90 95

Glu Pro Arg Lys Lys Arg Thr Leu Val Gln Lys Lys Ser Gln Arg Leu
100 105 110

Gln Lys Pro Leu Arg Val Asp Leu Ala Leu Glu Asn His Ser Lys Ile
115 120 125

Pro Ala Pro Lys Asp Ile Leu Ala His Gln Val Pro Asn Ala Lys Lys
130 135 140

Leu Arg Arg Lys Glu Glu Leu Trp Glu Lys Leu Ala Lys Gln Gly Glu
145 150 155 160

Leu Pro Arg Asp Val Arg Lys Ala Gln Ala Arg Leu Leu Ser Pro Pro
165 170 175

Thr Pro Lys Ala Lys Pro Gly Pro Gln Asp Ile Ile Glu Arg Pro Phe
180 185 190

Tyr Asp Leu Trp Asn Pro Asp Asn Pro Leu Asp Thr Pro Leu Ile Gly
195 200 205

Gln Asp Ala Phe Phe Leu Glu Gln Thr Lys Lys Lys Gly Val Arg Arg
210 215 220

Pro Gln Arg Leu His Ile Lys Pro Ser Gln Val Pro Ala Val Glu Val
225 230 235 240

Ile Pro Ala Gly Ala Ser Tyr Asn Pro Thr Phe Glu Asp His Gln Ala
245 250 255

Leu Leu Arg Glu Ala His Glu Val Glu Leu Gln Arg Glu Lys Glu Ala
260 265 270

Glu Lys Leu Glu Arg Gln Leu Ala Leu Pro Thr Ser Glu Gln Ala Ala
275 280 285

Thr Gln Glu Ser Val Phe Arg Glu Met Cys Glu Gly Leu Leu Glu Glu
290 295 300

Ser Asp Gly Glu Asp Glu His Glu Ala Gly Arg Ala Gly Gln Pro Glu
305 310 315 320

Ala Gly Asp Gly Thr Thr Glu Ile Ser Pro Thr Gly Ala Ala Gly Pro
325 330 335

Glu Lys Arg Met Glu Lys Lys Thr Glu Gln Gln Arg Arg Arg Glu Lys
340 345 350

Ala Ala Arg Lys Leu Arg Val Gln Gln Ala Ala Leu Arg Ala Ala Arg
355 360 365

Leu Gln His Gln Glu Leu Phe Arg Leu Arg Gly Ile Lys Ala Gln Val
370 375 380

Ala Arg Arg Leu Ala Glu Leu Ala Arg Arg Arg Glu Gln Arg Arg Ile
385 390 395 400

Arg Arg Leu Ala Glu Ala Asp Lys Pro Arg Arg Leu Gly Arg Leu Lys
405 410 415

Tyr Gln Ala Pro Asp Ile Asp Val Gln Leu Ser Ser Glu Leu Ser Gly
420 425 430

Ser Leu Arg Thr Leu Lys Pro Glu Gly His Ile Leu Arg Asp Arg Phe
435 440 445

Lys Ser Phe Gln Lys Arg Asn Met Ile Glu Pro Arg Glu Arg Ala Lys
450 455 460

Phe Lys Arg Lys Tyr Lys Val Lys Leu Val Glu Lys Arg Ala Tyr Arg
465 470 475 480

Glu Ile Gln Leu

<210> 17

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 17

tagatatcgc cttggaacaa gagaaga

27

<210> 18

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 18

atgaattctc agttgttctt tgtgacctg a

31

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